



Stewardship

Providing Leadership for the stewardship of rangelands based on sound ecological principles

Vol. 2, No. 2 – April 2014



(Photo by Jim Thorpe)

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The Editor's Corner

This issue of *Stewardship* may look a little different to you. We have included an article which is in a different format than our standard articles, incorporating a lot of photos and diagrams. We've also included an article, which was originally published in 1948, from SRM's first President Joe Pechanec regarding the formation of our Society.

We hope you find this issue interesting and, more importantly, useful. Let us know what you think!

Several individuals have indicated that they have topics they would like to write about. Now is the time! If you think an item is interesting, then there will be many other readers that will want to see that information. We will start working on the June issue in the near future. There is still plenty of time to submit an article for that issue.

I have been involved in the editing/publishing process of SRM publications for more years than I like to admit. I do find working on *Stewardship* the most fun I have ever encountered. There is a great support group assisting behind the scenes. They are dedicated to providing a publication like you want. All we need is the information. I am waiting to hear from all of you.

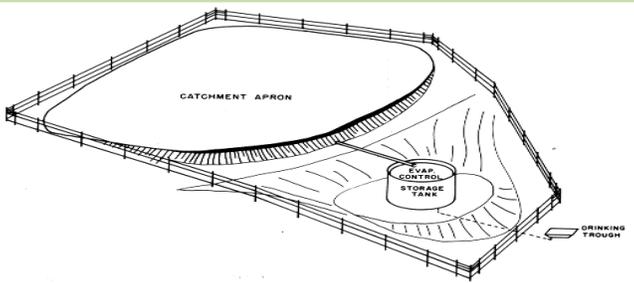
Gary Frasier
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Water Harvesting: the process of collection and storing of water from an area that has been treated to increase precipitation runoff.

An Illustrated Guide to Water Harvesting for Drinking Water Supplies

By: Gary W. Frasier
Stewardship Editor



The following is a summary of an article I wrote regarding water harvesting several years ago. Water harvesting is a water supply technique which is over 4,000 years old. Variations of the concept are currently being used in many arid and semiarid regions of the world. It is not necessarily an inexpensive water supply method, but it is a feasible means in areas where other water sources are unavailable. It is basically composed of an area for collecting precipitation with a facility for storing the collected water.

To my knowledge, no one in the US is conducting research on the topic of “Water Harvesting”, and there is no standard design. Each facility should be designed to fit the local conditions and material available. A couple of the facilities shown in this article were built over 40 years ago. If the local user did the required YEARLY maintenance, they have continued to work as well now as when they were installed. The KEY to the longevity of their use is to ensure there is a yearly maintenance program.

Water harvesting can work in areas where other water sources are not available. Collecting water is the least expensive part of this process; storage for the collected water is the most expensive. You must also have means of reducing water loss from evaporation and seepage during storage. If you are going to make an investment to collect the water, then be sure you are willing to protect that investment with a proper storage facility, and regular maintenance.

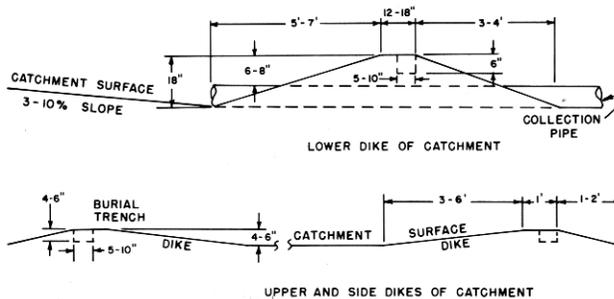
Be sure to check with your local state and federal agencies regarding permits which may be required before you begin construction on a water harvesting project.

More complete and detailed information can be found in the *USDA Ag Handbook 600 (1988)* on the USDA National Agricultural Library’s website at <http://handle.nal.usda.gov/10113/23756>, or check with your local NRCS office for technical assistance.

Sincere appreciation to Vicky Trujillo for doing the page layout for this article.

Catchment Surface Preparation

- No standard shape or size
- Catchment slope-3-5%
- All vegetation removed from area
- Area smoothed and compacted



Shaping flat surface



Compacting flat surface



Smoothing flat surface

Catchment Treatments

- No standard or best treatment
- Use Locally available materials
- Lower cost materials usually have shorter life-span and require more maintenance



Paraffin wax makes soil water-repellant to increase run-off (hot climate only)



Inverted roof over storage tank

Catchment Treatments



Rock outcropping: Water storage cistern in background



Steel sheeting: Concrete tank with drinking trough in foreground



Mortared flagstone: Rubber lined reservoir in foreground



Poured concrete slab

The content and information of each piece is solely a reflection of the author and is in no way an official position for the Society for Range Management.

Asphalt-membrane Covering



Initial bottom strips



Overlapping and coating fabric strips



Applying sealcoat two months later



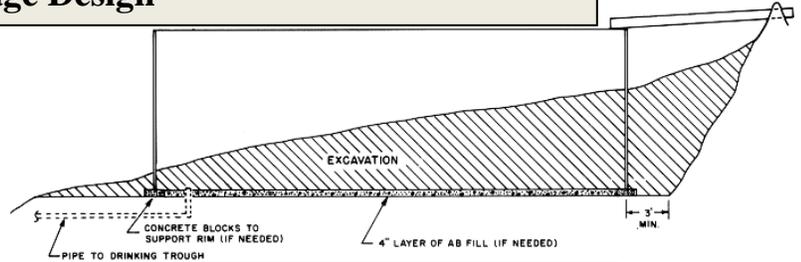
Finished water harvesting system with tank

Water Storage Design

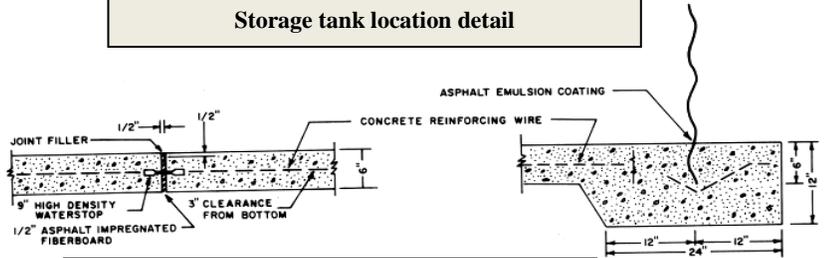
- Water storage most expensive item of water harvesting system – minimize size
- Evaporation control of stored water a key item
- Sloping sided storages usually less desirable



Floating cover: Foamed butyl for evaporation control on steel rimmed tank with poured concrete bottom



Storage tank location detail

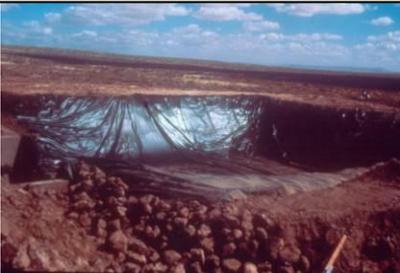


Poured concrete bottom detail

Water Storage Facilities



Asphalt planking composite



Plastic or artificial rubber membrane

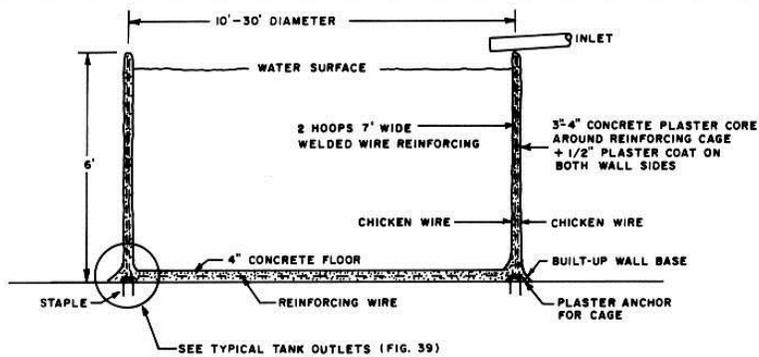


Plastic filled reservoir filled with large rocks for evaporation control



Steel rim concrete bottom

Plastered Concrete Storage Tank



Foreground: Plastered concrete tank with floating cover; Background: Steel rimmed tank with asphalt-fiber liner

Miscellaneous Items



Butyl rubber catchment covering destroyed by wind



Failure to protect drinking trough can lead to a potential loss of stored water

- Yearly maintenance of water harvesting system a must
- Poor design of a single item can cause system failure
- Sediment traps and trash screens usually not necessary on large open top storages
- Open top storages need facilities for small animals and birds to get out. Deer have been known to get into storages with floating covers
- Further details of water harvesting system design and constructions can be found in:
"Handbook of Water Harvesting"

<http://handle.nal.usda.gov/10113/23756>.

*Editor's Note: Following is an article originally published in the **Journal of Range Management (JRM)**, January 1948. We've chosen to re-print it here because we think the message presented is as valid today as it was when the article was originally published. GF*

Our Range Society

Journal of Range Management / Volume 1, Number 1 1948

When the new range society was first considered, doubtless most of you thought "Why form another organization?" I'd be surprised if you didn't! Most range men already belong to so many professional societies that to participate actively in another would severely tax their personal energies and prove a financial burden. Those active in efforts to form the Society were well aware of the pitfalls and thus gave its creation serious thought.

There were several objectives that most range men had in mind for a desirable society. These we have gleaned from your letters and from discussions with countless numbers of range men.

1. Recognition of range management and its application as a profession.
2. Liberal membership requirements to permit professional workers with highly varied basic training to become full members with an equal voice in society affairs.
3. The publication of a journal devoted to the subject of range and pasture which would provide a medium for exchange of new developments ideas, and for the discussion of policies.
4. Provision for meetings where range men can assemble yearly for exchange of ideas and development of unity in procedures for managing range lands.

Countless individuals in many different agencies or groups, and with highly varied basic training, are engaged in range and grassland work. On these workers fall the major responsibility of pointing the way toward the greatest productivity and fullest utilization of the forage resource consistent with maintenance of soil and forage. Moreover, these workers are responsible for the scientific validity of the work.

It seemed natural, therefore, that range men should organize to seek unity and agreement on objectives, procedures, and professional standards.

Nowhere within the framework of existent societies did there seem to be a place for range men. Objectives desired in a range organization could not be satisfied. All existing societies had been organized for other purposes and interests. To accommodate range men any one of them would have had to broaden its scope.

Plainly, something had to be done. Our profession had no status or unity. We needed a medium for exchange of ideas and unified expression of standards. We needed, also, a common meeting ground for the highly varied group in the field. But it was clear that we needed to push ourselves because no one was going to do it for us.

Out of these conditions the range society evolved. It first began in 1946 with a survey to find out what the majority of range men wanted. When it became evident that the majority desired a separate organization, a membership drive was launched in July, 1947. By the time of our first Annual Meeting in Salt Lake City in January, 1948, 500 had joined the Society. At present there are more than 650 members. Preparations are being made for our second annual meeting at Denver. The Society's program taking form rapidly is a result of the activities of the Council and seven committees. Interest in the Society is widespread throughout this country, Canada, and extending into South America.

Formation of our Society came at a particularly appropriate time. There is an acute awareness of the need to conserve renewable natural resources. Forage is one of these. In the battle for better management of resources, we must align ourselves closely with other allied societies. There will be no conflict between our Society and others in the fields of conservation. Efforts of these organizations will complement each other.

Upon our stewardship; either as owners, research workers, teachers, or administrators; depends the improvement and maintenance of the range resource. Our Society, through its own members and through cooperation with closely allied organizations, shall strive to make these range and grassland resources serve mankind to the fullest degree now and in the future. In achieving this end, we can perform many valuable functions:

We can present the ideas of professional range men to the public, to government circles, and to other societies.

- We can promote more complete and widespread education to insure the best management of our range resources.
- We can sponsor application of the best knowledge available to the management of publicly and privately owned range lands.
- We can encourage additional research into the fundamental principles of range management.
- We can provide an avenue for exchange of ideas and experiences among range and grassland workers.

To carry out these functions, as well as to increase unity and improve professional standards, will be the objectives of the American Society of Range Management (ASRM).

Joseph F. Pechanec

*President, Society for Range Management
(formerly ASRM), 1948*

Note: Joseph Pechanec was the first President of the Society for Range Management



WILDFIRES, RUNOFF, AND RESTORATION

By Gary Frasier, *Stewardship* Editor

“There is a fire on the mountain.” That is a statement heard way too often in the forest and rangelands in the West during the past few years.

Ranchers and range managers on the rangelands of the Western United States have an intimate knowledge of the devastating impact of wildfires on many components of the ecosystem.

The past few years have seen a proliferation of the mega wildfires across all Western States. These monstrous fires are a major cause of economic loss in the areas where they occur. There is potential loss of homes and even human lives. There is the loss of forage for wildlife and domestic animals. Cover for wildlife and bird nesting habitat is gone. These are only some of the obvious results of wildfire. Millions of dollars are spent fighting these fires. In the current economic times this money could be used to enhance the natural resources.

There is another potential loss that occurs after excessive fuel load fires are controlled. Many people do not realize the potential loss of the hydrologic function of the watersheds and how fire can have a devastating effect on this aspect of a healthy rangeland. A healthy functioning watershed provides a means of controlling runoff water from rain and snow that fall on the land as precipitation. A fire may destroy this protective covering of vegetation and, even more important, may change soil properties and reduce the rate at which water can infiltrate into the soil.

As water runs off the land it carries ash of the burned vegetation; but more importantly, it also carries soil which is needed to support vegetation. Without good soil, the vegetation necessary to stabilize the landscape cannot re-establish itself. This vegetation is critical to reduce rainfall impact on soils, and allows water infiltration. Fire may change all or some of these natural functions if fire frequencies are extended or controlled beyond normal time frames and excessive vegetation is not controlled in other manners.

To assist the land in recovering, programs are developed to aid the revegetation effort. This effort may consist of adding organic mulch covering to the soil surface; native plant seed broadcast spreading; and in some areas, planting tree seedlings. Barriers or straw wrapped in a loose mesh are placed across areas where concentrated water flows. Much of this work is done by hand.

All too often the resources to rehabilitate the land are not available. The money has been used to fight the fire.



I despise fire, but have learned to view it realistically. I lost my father as a result of a prairie fire in Western Nebraska. I live in an area north of Denver, Colorado that has seen major fires almost every year for the past 5 years. We will always

have fires. Wild fires have had many negative effects on my life but I also know that fire is a part of the natural processes in a functioning ecosystem.

Ecosystems can utilize small fires. They promote desirable plants for animals. Properly timed small fires help control the growth of dense underbrush which is the fuel for mega fires. We must learn how to control rangeland vegetation to minimize fire size and provide firefighters a safer chance in fire control. When fire occurs it is imperative to establish re-vegetation in the burn area as soon as possible.

We must do everything possible to put rangeland fire in proper perspective. People like to live next to or in forests. Most of them do not realize that they are

sitting on a potential “powder keg.” Too many homes and firefighters’ lives are being lost every year because fires get so large so fast due to excessive fine-fuel loads (i.e.; lack of fire frequency or thinning practices).

As members of a Society that promotes proper ecosystem management, we should all do our part in minimizing fire effects; from clearing undergrowth on our properties, to volunteering on rehabilitation projects. Most importantly, we must increase our effort to inform the public on how to prevent uncontrollable fires in their neighborhoods.



Rehabilitation crew on High Park Fire

Photo by permission of Jennifer Kovecses, Restoration Coordinator – High Park Fire Program, [Wildlands Restoration Volunteers](#), Fort Collins, Colorado